Period: Date: Name:

**History of Astronomy Take Home Assignment Honors**

**Directions: Access and read the online text, chapter 22, section 1 and then answer the following questions. Type directly into the document, or print out and write in your answers. Please print out and turn in on time.**

1. Compare/contrast the Geocentric and Heliocentric models of the solar system. Which model turned out to be accurate?

2. Which early civilization is credited with having begun the “Golden Age” of astronomy? How did these people explain the natural world?

3. How did Aristotle determine that the Earth was round?

4. By whom and in what time period was the heliocentric model of the solar system first proposed?

5. Do some research on European History during the Middle Ages time period, focusing specifically on ruling authorities, doctrine and “accepted” teaching and thought. After researching, explain why it could have been dangerous for early scientists/astronomers to publish or present their findings to the public during this time period. (Hint: What happened to Galileo?)

6. Explain the concept of the celestial sphere and how ancient civilizations viewed the universe this way.

7. Describe the shapes of planetary orbits as we know them today.

8. What invention enabled Galileo to make his observations and ultimately provide groundbreaking evidence that supported the Copernican view of the solar system? What were some of Galileo’s observations?

9. Who developed the three laws of planetary motion?

10. Which of Kepler’s laws of planetary motion explains why planets move faster near the Sun and slower when they are far from the Sun?

a. The Law of Ellipses (#1) c. The Law of Equal Areas (#2)

b. T2 = d3 (#3) d. The Law of Dancing Turtles

11. Which of Kepler’s laws of planetary motion explains the shapes of planetary orbits?

a. The Law of Ellipses (#1) c. The Law of Equal Areas (#2)

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12. Which of Kepler’s laws of planetary motion explains the relationship between how long it takes a planet to orbit the Sun and how far the planet is from the Sun?

a. The Law of Ellipses (#1) c. The Law of Equal Areas (#2)

b. T2 = d3 (#3) d. The Law of Dancing Turtles

13. Which early astronomer created astronomical tools and made observations of the heavens for most of his life (25 years)?

14. What is an Astronomical Unit (AU)? How many miles is 1 AU? **1km = .62mi**

15. Describe how Eratosthenes measured the Earth’s circumference.

16. Describe how the Ptolemaic system explained retrograde motion.